REMOTE SENSING IN MINERAL EXPLORATION FROM LANDSAT (ERTS) IMAGERY

Test Site No. 2 (Colorado)

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REMOTE SENSING IN MINERAL EXPLORATION FROM LANDSAT (ERTS) IMAGERY, Test Site No. 2 (Colorado)

Contract No. NAS5-20955

LANDSAT Investigation No. 22840

Problems - Communications and funding.

Accomplishments

1. Completion of a 930 item bibliography for the Colorado Mineral Belt.

2. Annotation of photo-linears for a belt 40 - 80 miles wide and 250 miles long paralleling the Colorado Mineral Belt were mapped at a scale of 1:1,000,000 on positive transparencies using a zoom stereoscope (fig. 1). These linears have been transferred to 2-degree topographic maps (scale 1:250,000).

At the present time each linear is being classified using published maps as follows:

a. Straight topolinears

(1) faults and shear zones

(2) joint control of stream segments

(3) foliation control of stream segments

(4) lithologic contacts

(5) vein system and dikes

(6) parallel drainage on consequent volcanic surfaces

(7) glacial erosional and depositional features

(8) unexplained photo linears

b. Curvilinears

An example of such a classification is shown at a scale of 1:250,000 for the area surrounding Central City and

Georgetown (fig. 2). Mineral districts within the area are located.

Outline of work planned for the next reporting period:

1. Complete the evaluation of photolinears.
2. Field check photolinears not explained with published maps.
3. Evaluate linears with respect to known mineral districts.
4. Using a color additive viewer evaluate LANDSAT imagery to determine best scenes for computer ratioing.
5. Field check selected mining districts to determine surface manifestations which might be detected on LANDSAT imagery.

Significant Results

None to date.

Publications

None.

Recommendations

Increase funding as requested in quarterly report (2) of January 23, 1976.

Funds Expended to Date

$13,750.00

Data Use

Value of data allowed - ?

Value of data ordered - ?

Value of data received - All LANDSAT imagery received.

(42 scenes of central and western Colorado)

Aircraft Data

None received to date.

Reference used in identification of linears

Lovering, T. S. and Goddard, E. N.,]950, Geology and Ore Deposits of the Front Range, Colorado, USGS Prof. Paper 223, geologic map]:62,500.

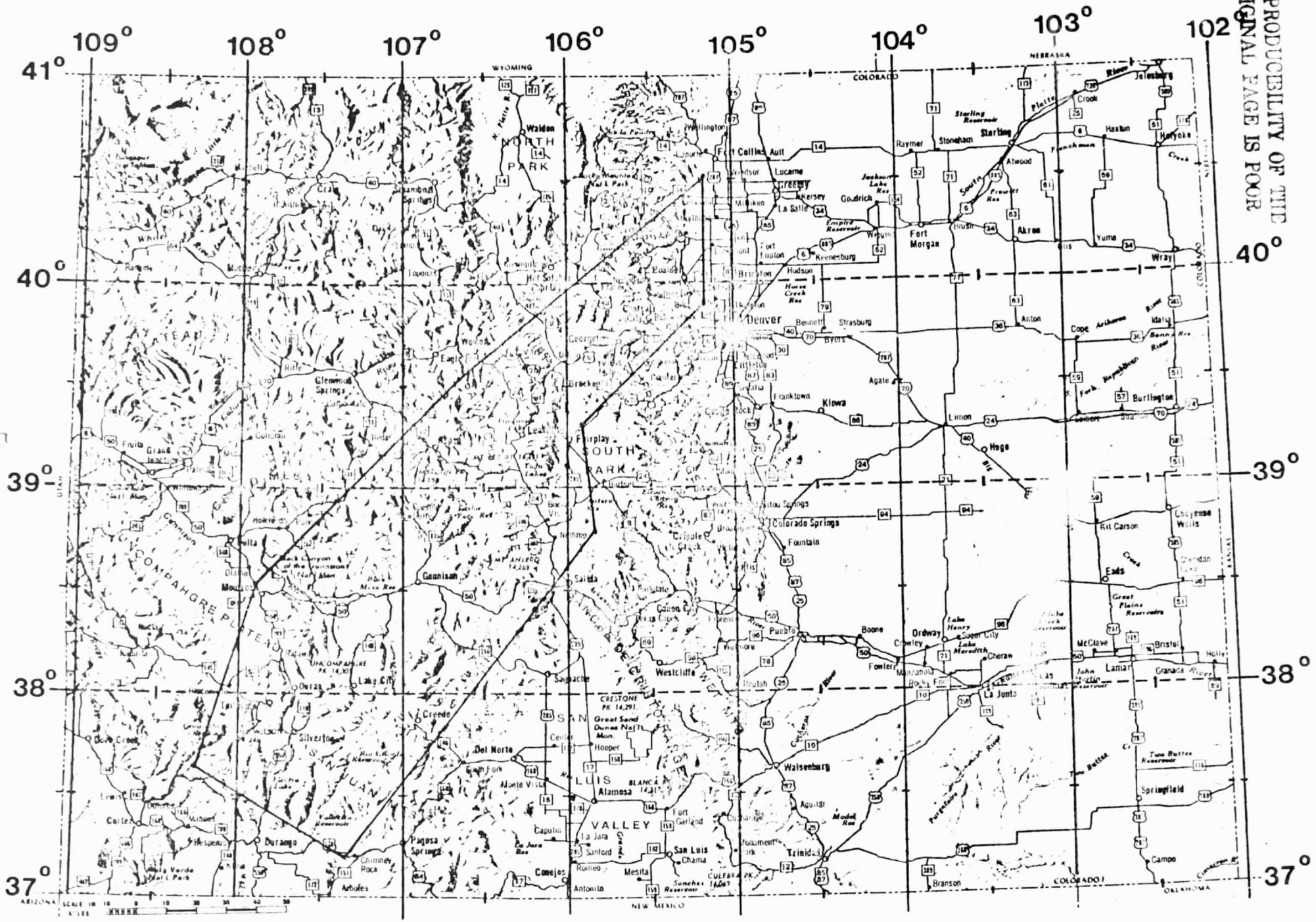
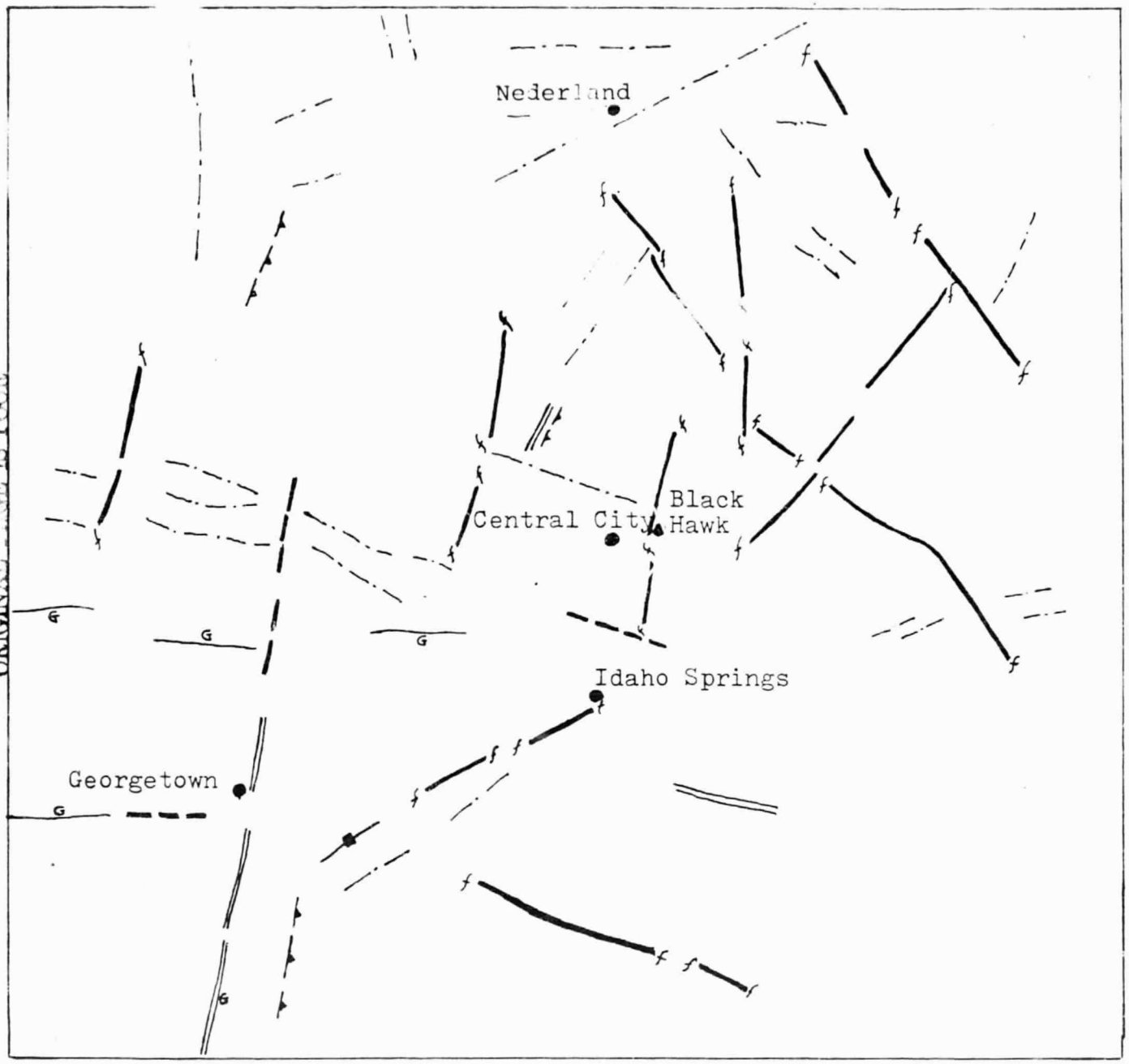


Fig. 1. Area covered by linear mapping.



Mineral districts

f——f Faults and shear zones

Joint controled stream segments

Foliation controled stream segments

Lithologic contacts

Vein systems and dikes

G Glacial erosional and depositional surfaces

Unexplained photolinears

0 5 10
Miles

Fig. 2. Linears mapped in the Central City - Georgetown area.